# Prehospital Pediatric Care

## Respiratory Emergencies

## Instructor Guidelines

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**Acknowledgement**

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# Respiratory Emergencies
# Summary and Answers

This module will require about four hours of time to view the videotape, complete the workbook and discuss the concepts. You can organize the delivery so that the students work individually and meet with you to discuss the concepts or you can choose to do a group session.

If you choose to have a group of learners together, we recommend you limit the number in order to efficiently grasp the information. Once you have used the module, you will be able to determine what is best for your situation.

It is very important that each learner have access to both the video and the workbook. Just viewing is not sufficient. The workbook provides new information as well as reinforcing material provided in the video. PLEASE maintain the concept of working back and forth between the video and the workbook.

The skills associated with this module are crucial to competent care. It is recommended that the skills be practiced in conjunction with the video and the workbook, especially those of assessment.

## PART A

**Desired Outcomes (ANATOMICAL FEATURES OF THE PEDIATRIC AIRWAY)**

1. Oxygen moves through lungs, into blood stream: is carried via RBC's to cells in tissues and organs to be used in normal metabolism

2. Ventilation is the physical action that pulls oxygen into lungs and rids body of carbon dioxide

3.
   a. Large tongue-obstructs upper airway
   b. Obligate nose-breathing infants will become hypoxic is nose is congested/obstructed
   c. Larynx positioned high-more difficult to visualize cords with intubation
   d. Trachea is smaller and shorter-will collapse if neck is hyperextended
   e. Weak/unstable chest wall-increased work of breathing will cause fatigue and resp failure

4.
   a. (Tongue)-position on side or use airway
   b. (Nose breathing)-suction to keep nares open
   c. (Larynx)-apply light pressure over larynx when intubating
   d. (Trachea)-towel roll under shoulders rather than hyperextend head
   e. (Chest wall)-do not hesitate to assist ventilation; be aware of increased work of breathing.

## PART B

**Desired Outcomes (PREHOSPITAL ASSESSMENT)**

1.
   a. Presence of fever?
      No fever think foreign body
      Low fever think croup
      High fever think epiglottitis
   b. Coughing or choking?
      Coughing without other symptoms think foreign body
      Seal like cough think croup
      Usually no cough with epiglottitis
   c. Ability to drink? presence of drooling?
      Refusal to drink associated with drooling think epiglottitis
   d. Change in voice such as hoarse?
      Associated primarily with croup
   e. Prior similar problems?
   f. Known Asthmatic?

2.

a. Stridor
b. Abnormal resp. rate
c. Retractions
d. Nasal Flaring
e. Grunting
f. Positioning
g. Color change
h. Heart rate increased or decreased
i. Altered mental status***

3. BRADYCARDIA

4. Patient; Rate; Depth

5. Observe rise and fall of chest and abdomen; visualize or place hand on chest/abdomen

6. Wheezing is a high pitched expiratory sound due to obstruction of airway tubes (mucous/spasm) Crackles are soft, inspiratory sound caused by fluid in alveoli

7. Snoring: upper airway obstruction, often the tongue Stridor: upper airway obstruction in larynx, usually swelling

**QUIZ QUESTIONS-PARTS A&B**

| | | | |
|---|---|---|---|
| 1. c | 2. d | 3. b | 4. d |
| 5. a | 6. b | 7. c | 8. c |
| 9. a | 10.c | 11.a | 12.d |
| 13.e | 14.b | | |

## PART C

### Desired Outcomes (COMMON UPPER AIRWAY EMERGENCIES)

1.
   a. Viral; slow onset with cold, runny nose and low grade fever
   b. Bacterial; sudden onset (hrs) with high fever, drooling

2. Runny nose, coughing, seal-like cough, stridor, hoarse

3. Sudden onset of high fever, extremely sore throat, will not swallow so drooling and refusal to eat or drink

4. Sudden onset in a previously well child of coughing, choking, stridor or total airway obstruction

5. Cool, cold air

6.
   a. Do not visualize mouth or throat
   b. Do not agitate or make cry
   c. No invasive procedures

7. Insert oropharyngeal airway and manually bag patient. Use two people to get sufficient force to by-pass obstruction

8.
   a. None/offer oxygen and transport
   b. Infant: back blows and chest compressions
      Over 1 year of age: Heimlich maneuver
      If trained personnel: attempt to visualize and remove with Magill forceps

### QUIZ QUESTIONS

| | | | |
|---|---|---|---|
| 1. c | 2. a | 3. a | 4. b |
| 5. b | 6. c. | 7. a | 8. C |
| 9. d | 10.b | 11.d | 12.d |

## PART D

**Desired Outcomes (COMMON LOWER AIRWAY EMERGENCIES)**

1. Hyper reaction of respiratory tree to foreign substances

2.
   a. Spasm of bronchi & bronchioles
   b. Edema of bronchi & bronchioles
   c. Excessive mucous production which occludes airway passages

3. Increased work of breathing with both inspiration and expiration; wheezing, pallor or cyanosis and fatigue

4. High concentration of oxygen; pts are hypoxic Fluids; enables child to cough and remove secretions

5. Respiratory Failure

6. Viral infection of lower airways

7. Simple cold progresses to dyspnea, resp. distress or respiratory failure

8. High flow oxygen; B/V/M support if signs of severe distress or failure

9. Results from prematurity and therapies used to treat problems of premature infants

10. Parents will describe deterioration with signs of severe distress or respiratory failure

**QUIZ QUESTIONS**

| | | | |
|---|---|---|---|
| 1. b | 2. c | 3. a | 4. d |
| 5. b | 6. c | 7. a | 8. d |
| 9. b | 10. c | | |

## PART E

**Desired Outcomes (RESPIRATORY FAILURE)**

1. prevention of respiratory failure

2.

| | |
|---|---|
| tachypnea | bradypnea |
| tachycardia | bradycardia |
| retractions | decreased cap refill |
| use of access/muscles | weak proximal pulses |
| agitation | decreased LOC |

**QUIZ QUESTIONS**

| | | | |
|---|---|---|---|
| 1. c | 2. b | 3. a | 4. b |
| 5. b | 6. a | 7. a | 8. c |

## PART F

**Desired Outcomes (PREHOSPITAL MANAGEMENT)**

1. Minor levels: hyperactivity, agitation
   Higher levels: decreased LOC, coma

2. Minor levels: tachy rhythms, ectopy, vasoconstriction
   Higher levels: bradycardia, vasodilation

3.
   a. Use jaw thrust; do not hyperextend
   b. Suctioning: ensure nose in infants; bulb syringe with infants; catheter in older
   c. Blow-by: hold in front or to side; avoid hypothermia
      Nasal: usually not tolerated in younger; only provides 34%
      Mask: when higher concentrations are needed, difficult for young children to tolerate
   d. B/V/M*:* do not place pressure on eyes, eyebrows of infants
   e. Pulse oximeter: helps evaluate status of therapies
   f. Nasogastric tube: should be inserted with B/V/M or intubation to prevent gastric distention
   g. Cardiac monitor: evaluates status and response of heart to therapies

**QUIZ QUESTIONS**

| | | | |
|---|---|---|---|
| 1. b | 2. c | 3. d | 4. a |
| 5. c | 6. b | 7. d | 8. c |

**PART G**

**Desired Outcomes (TECHNOLOGY ASSISTED CHILDREN)**

1.
   a. Single cannula
   b. Double cannula
   c. Fenestrated

2. Cuff line with pilot balloon will be attached to trach tube

3. Use sterile technique; insert catheter, cover opening with thumb and suction as catheter is removed; supplement with oxygen

4.
   a. Assemble equipment
   b. Suction; instill NS if possible
   c. Ensure obturator in place; insert new tube
   d. Secure tube and remove obturator

5. Place mask directly over opening and assist

6. Remove mask and attach valve directly to tracheostomy cannula